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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,046	07/13/2001	Frank Leymann	DE920000015US1	6970

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EXAMINER	
BARQADLE, YASIN M	

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 07/20/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/682,046	LEYMANN ET AL.	
	Examiner	Art Unit	
	Yasin M Barqadle	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04-22-2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *2 and 9* is/are withdrawn from consideration.

5)☒ Claim(s) *1,3-7 and 14* is/are allowed.

6)☒ Claim(s) *8,10-13 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 22, 2004 has been entered.

Response to Amendment

2. The Response filed on April 22, 2004 has been entered and made of record.

- Claims 1,3-7, and 14 are allowed.
- Claims 2 and 9 have been canceled.
- Claims 1,8, 13-18 have been amended.
- Claims 1,3-8, and 10-18 are presented for examination.

Response to Arguments

3. In response to applicant's arguments on page 10, that ``Nothing in the recited portion of Kirch teach or suggest a `measure of availability' that `indicates unavailability of said

application server, if said difference exceeds said notification-period.''' Examiner respectfully notes that Kirch's determines the availability of node (application server) based on heartbeat packets received from each node within a predetermined timeout interval [Col. 9, lines 64 to Col. 10, line 31]. If the timeout interval is larger than the predetermined timeout interval, unavailability (failure) of the node (application server) is indicated (col. 20, lines 12-62].

In response to applicant's arguments on page 10 that `` the combination of Kirch and Connelly does not teach or suggest a `persistent central availability-database'.'' Examiner notes respectfully that Connelly teaches a central repository (persistent) storage where events effecting computer system availability are stored. [Col. 3, lines 39-53]. According to Microsoft Computer Dictionary (fifth edition) on page 399, persistent storage is defined as memory that remains intact when the power to a device is turned off. In other words it is a non-volatile memory. Therefore, Connelly clearly teaches a persistent central availability-database and a persistent file system that is stored in a central database.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pert ains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 8,10-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirch US (6324161) in view of Connelly et al US (6594786).

As per claim 8, Kirch teaches a computerized method for determining availability of one or multitude of application-servers for accepting application-service-request, said method comprising a first step of querying a availability-database for a first-data-element comprising a notification-period (internal timing table stores heartbeat signals from operational nodes), said notification period defining an upper time limit (supply period), for a repetition-period of an availability signal being repeated as long as said application-server is available [Col. 8, lines 25-67 to Col. 9, lines 1-58], and

for a second-data-element comprising for a recent availability-signal its time stamp as recent availability-time, and said method comprising a second step of determining a measure of availability of said application-server by comparing the difference of the current-time and said recent availability-time to said notification-period [Col. 19, lines 65-67 to Col. 20, lines 1-59], said method comprising a third step of issuing an application-service-request to said application-server only, if said measure of availability indicates availability of said application-server, and wherein said measure of availability of the second step indicates unavailability of said application-server, if said difference exceeds said notification-period [Col. 11, line 28 to col. 12, line 19; Col. 19, lines 65-67 to Col. 20, lines 1-59].

Although Kirch shows substantial features of the claimed invention including an internal timing table for each node that records history of each heartbeat packet broadcast on the network, he does not explicitly show a persistent central availability-database. Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Kirch, as evidenced by Connelly et al USPN. (6594786).

In analogous art, Connelly et al, whose invention is about a fault tolerant high availability system, disclose central repository (persistent) storage where events effecting computer system availability are stored. [Col. 3, lines 39-53]. Giving the

teaching of Connelly et al, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Kirch by employing the system of Connelly et al so that critical information identifying downtime events that compromise effectiveness can be discovered, fault tolerant system solutions can be designed to prevent common causes of downtime, and realistic availability goals can be created and monitored [Col. 3, lines 13-20].

As per claim 10, Kirch teaches a computerized method for determining availability according to claim 8, wherein said method is querying in said first step also for a third-data-element comprising a previous availability-time for a previous availability-signal [Col. 19, lines 7-67 to Col. 20, lines 1-59], and

wherein in said second step also as a second difference the difference of said recent availability-time and said previous availability-time is included in said measure of availability [Col. 19, lines 7-67 to Col. 20, lines 1-59].

As per claim 11, Kirch teaches a computerized method for determining availability according to claim 8,wherein said measure of availability indicates unavailability of said application-server, if said difference exceeds said notification-period by a factor of N [Col. 19, lines 65-67 to Col. 20, lines 1-59].

As per claim 12, Kirch teaches a computerized method for determining availability according to claim 10, wherein said method is being executed for a multitude of application-servers and wherein in said third step a subset of application-servers, comprising application-servers for which said measure of availability indicates availability, is determined, and for each application-server within said subset its corresponding measure of availability is interpreted as a workload indication, and said application-service-request is being issued to an application-server with the lowest workload [Col. 8, lines 25-56; Col. 10, lines 54-67 and Col. 11, lines 1-34].

As per claim 13, Kirch teaches a system indicating availability of one or a multitude of application-servers (Fig. 3a), said system comprising:

a first device for inserting into a availability-database (internal timing table stores heartbeat signals from operational nodes) a first-data-element comprising a notification-period (heartbeat information message timeout period), said notification-period defining an upper time limit (supply period) for a repetition period of an availability-signal being repeated as long as said application-server is available [heartbeat packets (message information) provide repeated periodic indication of node and communication path availability Col. 8, lines 25-67 to Col. 9, lines 1-58]; and

said method comprising a second step of inserting into said availability database a second-data-element comprising for each availability-signal its corresponding time stamp as availability-time [Col. 18, lines 34-67]; and

whereby, the difference of the current-time and a recent availability-time compared to said notification-period is representing a measure of availability of said application-server [Col. 19, lines 65-67 to Col. 20, lines 1-59].
As for the issue of persistent central availability-database see the rejection made on claim 8 above.

As per claims 16, 17 and 18, these are system, data processing program and computer product claims with similar limitations as the method claim 8 above, therefore, they are rejected with the same rationale.

Conclusion

5. The prior made of record and not relied upon is considered pertinent to applicant's disclosure.
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 703-305-5971. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be

reached on 703-305-4792. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Yasin Barqadle
Art Unit 2153

GLENTON B. BURGESS
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